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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,695	12/17/2003	William Keith Fisher	1001.009	5799

44144 7590 03/10/2006

BRENC LAW  
47 BANKS ROAD  
SIMSBURY, CT 06070

EXAMINER
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NAKARANI, DHIRAJLAL S

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/736,695	Applicant(s) FISHER, WILLIAM KEITH	
	Examiner D. S. Nakarani	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 44-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 44-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-27 and 44-47 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for claimed domains comprising microcapsules, wherein microcapsules comprising polymer shell made of polymers recited in claims 4 or 14 and core comprising agent(s) recited in claims 6 or 16 dispersed in **liquid** dielectric material(s) recited in claims 5 or 15, does not reasonably provide enablement for domains comprising microcapsules, wherein microcapsule comprising shell made of polymers recited in claims 4 or 14 and core comprising organic agent dispersed in solid polymers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Invention as claimed is broader because in order to alter amount of visible light that can be transmitted through polymer sheet in response to the application of an electric field agent has to move in the core of claimed microcapsules. If the dielectric agent is solid, the agent may not have required mobility for altering amount of visible light on application of electric field.

3. Claims 4 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 14, lines 7-8, the phrase "styrene ----- t-butyl acrylate" renders claims indefinite since recited members styrene, methyl methacrylate, acrylonitrile etc. are monomers. Therefore it is not clear whether applicant is trying to claim recited monomers or their polymers. Clarification and/or correction requested.

4. Claims 1-8, 11-18, 21-24 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai (U. S. Patent Application Publication US 2003/0086149 A1) in view of Duthaler et al (WO 03/050607 A1).

Kawai discloses electrophoretic device (Fig.1) comprising glass or polyethylene terephthalate layer 1 with electrically conductive layer 2 and glass or polyethylene terephthalate layer 6 with electrically conductive layer 7 (Paragraphs 0042 and 0043), microcapsules dispersed in binder resin 5. The microcapsule comprises shell 3 dielectric liquid 4b (Paragraph 0045) and charged particles 4a such as titanium oxide, aluminum oxide, carbon black etc. (Paragraph 0044). The dielectric liquid includes aliphatic hydrocarbon, halogenated hydrocarbon, silicone oil etc. The binder resin 5 is an acrylic resin (Paragraph 0053). The resin for shell 3 includes urethane resin, melamine resin, urea resin etc (Paragraph 0046). Kawai discloses voltage source (Fig. 3). Kawai fail to disclose other resins claimed in claims 4 or 14 as shell 3 forming

material, claimed dielectric materials such as claimed in claims 5 or 15 and microcapsule binder resin 5 such as polyurethane.

Duthaler et al disclose electrophoretic device comprising similar microcapsules disclosed by Kawai. Duthaler et al disclose claimed shell forming resins (Page 51, line 26 to page 52, line 11). Duthaler et al disclose dielectric liquids claimed in claims (See page 45, line 21 to page 47, line 3). Duthaler et al disclose agent such titania, silicon oxide, aluminum oxide etc (Page 41, line 10 to page 42, line 8). Duthaler et al disclose binder resins such as polyurethanes claimed in the instant invention (page 54, line 21 to page 55, line 10).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of this invention made to utilize disclosure of Duthaler et al in the invention of Kawai to use Duthaler et al's shell forming resins, dielectric fluid and binder resins since they are used for similar application.

5. Claims 9, 10, 19, 20 and 25-27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

6. Applicant's arguments filed January 10, 2006 have been fully considered but they are not persuasive. In reference to rejection of claims 1-48 under 35 USC §112 first paragraph; scope of enablement, applicant agrees that agents that require mobility to cause an "alteration in the amount visible light" may not be mobile in various solid

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polymers. However applicant state that (1) the specification teaches embodiments in which no agent mobility is required, and (2) an agent requiring mobility function to cause "alteration in the amount of visible light" that is disposed in a solid polymer in which it is not mobile in the "plurality of domains" will not alter the amount of visible light, and hence is not within the scope of claim 1. In reference to point (1) above applicant points to page 14, paragraph beginning from line 14 of the specification. That paragraph describes bridging and tethering agents that are capable of altering the transmission of visible light through conformation change without agent mobility and points to reference document U. S. Patent Application US 2003/0096113.

These arguments are not persuasive because the said document requires mobility of light altering tethered or bridged agents (i.e. nanoparticles) (see Paragraphs 0104-0115 and 0130).

In reference to rejection of claims 1-8, 11-18, 21-24 and 44-48 under 35 U.S.C. 103(a) as being unpatentable over Kawai (U. S. Patent Application Publication US 2003/0086149 A1) in view of Duthaler et al (WO 03/050607 A1), applicant state that in view of amendments, these rejections are moot.

This argument is unpersuasive because amended claims are not limited to the polymeric layer made of poly(vinyl butyral), which was indicated, allowable in the prior Office Action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. S. Nakarani whose telephone number is (571) 272-1512. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**D. S. Nakarani**  
**Primary Examiner**  
**Art Unit 1773**

DSN  
March 8, 2006.